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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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23579	7590	06/04/2007		
PATREA L. PABST PABST PATENT GROUP LLP 400 COLONY SQUARE, SUITE 1200 1201 PEACHTREE STREET ATLANTA, GA 30361			EXAMINER MULLIS, JEFFREY C	
			ART UNIT 1711	PAPER NUMBER
			MAIL DATE 06/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/511,121

Applicant(s)

SPENCER ET AL.

Examiner

Jeffrey C. Mullis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) 4,7,11,13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8-10,12 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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Claims 1-3, 5, 6, 8-10, 12 and 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "non-interactive" is defined by applicants specification as meaning that no polymer interaction occurs with the metal surface. However it is unclear what is intended when a metal surface is not required to be present in the first place.

Claims 12-14 and 17-18 are unclear in that they recite sliding surfaces despite the fact that applicants are claiming a product, not a process and as such process steps make no sense.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 8-10 and 12 are rejected under 35 U.S.C. 102(a) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as obvious over Toshiaki (JP 2002-060772).

Patentees disclose a friction reducing resin coating (patent claim 1) containing a comb polymer having a backbone of methacrylic acid and side chains of methoxypolyethylene glycol (paragraph 69). Note the examples where these materials are used to coat stainless steel pipes etc which are pounded into the ground, a process in which the coating would be between the pipe (in that it was applied to the pipe) and a surface comprising earth (in that the pipe is pounded into the earth and is therefore in contact with the earth). Note the first paragraph on page 8 of applicants specification disclosing that steel surface acquires a charge naturally depending on pH and that trend toward low pH results in more cationization while higher pH will eventually result in formation of anionic surface where this is possible. As the comb polymer coating contains carboxyl groups it would be at least slightly anionic due to ionization of carboxyl, while the surface of the pipe would be exposed to the acidic comb polymer it would be in an acidic environment and therefore would be in cationic form. Furthermore both applicants coatings and patentees explicitly have friction reducing characteristics and for this reason also it would appear that they function the same way.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses

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properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 1, 5 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murata et al. (US 5,726,230). Patent claim 1 discloses "a graft reaction product" of an epoxy resin and an acrylic resin containing acrylic acids reacted therein and which would be expected to be acidic due to presence of said acrylic residues. Note column 13, lines 10-45 where these materials are coated on aluminum plates and friction against steel ball surfaces reduced as a result. Again, note applicants specification at the first paragraph on page 8 disclosing that even at neutral pH, Al surface is already positively charged. As the acrylic graft would be negatively charged due to ionization (or reaction with the Al plate), the characteristics of the claims re a charged surface would reasonably appear to be inherent.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 1-3, 5, 6, 8-9, 12, 16-18 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hubbell et al. (US 2003/0087111).

Patentees disclose a graft copolymer having a polylysine backbone and PEG side chains (a moiety having a hydroxyl functional group at the end) is deposited on a silicon dioxide surface as an aqueous solution. Note Example 4 and paragraph 129 and claim 29 disclosing polylysine as being polycationic. With re to applicants lubricating characteristic, even water (as is present in Hubbells' graft copolymer composition) is known to act as a lubricant (see for instance the last complete paragraph of the first column on page 143 of applicants Hollinger reference and the paragraph bridging columns 243 and 244 of Xiong) and Hubbells aqueous graft copolymer composition therefore reasonably appear to have lubricating properties even aside from the fact that applicants and Hubbells materials are graft copolymers with amine backbones and PEG side chains.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 9 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Hubbell et al., cited above in view of Singh et al. (US 20010049105).

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Hubbell do not disclose that biotin may be attached to the ends of their polymer but does disclose that bioactive species such as receptor ligands may be (paragraphs 55 and 56).

Singh et al. disclose that biotin may be used as a receptor ligand in paragraphs 38 and 161.

It would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention to attach biotin to the ends of the graft copolymer of the primary reference as taught by the secondary reference motivated to achieve the goal of the primary reference of a graft polymer with a receptor ligand at the ends thereof and by the disclosure of the secondary reference that biotin would fulfill the requirements as a receptor ligand as desired by the primary reference absent any showing of surprising or unexpected results.

Claims 12, 17 and 18 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Li et al. (US 2002/0143081). Li discloses numerous examples of graft copolymers having polyamine backbones such as PEI and which are applied as aqueous emulsions to glass. Note paragraphs 128 and 129 in this re. Note that the emulsion particles are charged in paragraph 108.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 12, 17 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Textor et al. (WO 00/65352), cited by applicants.

Patentees disclose "polyionic" "brush copolymers" for adsorption to surfaces (Abstract). Note the first paragraph on page 9 where it is disclosed that the backbones have a charge opposite of the substrates they are in contact with and that the side chains are non interactive. Note that the first paragraph on page 12 for use of polyethyleneimine backbones. Note page 16, lines 5-14 where it is disclosed that ligands are introduced at the ends of the PEG side chains. Note page 36, lines 1-16 for use of negatively charged metal substrates.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 1, 5, 8-10 and 12 are rejected under 35 U.S.C. 102(e or b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Higai. The cover of the US patent indicates that the patents 102(e) date is 6-14-2000 and provides hearsay evidence that the disclosure was published on 4-20-2000 as WO00/22058 and therefore the contents of the US patent was published more than 1 year from applicants US filing date.

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Patentees disclose a lubricated metal sheet (title) and discloses numerous examples (for instance 94-105 in Table 11-1 in columns 29 and 30) of comb polymers with polyethylene oxide side chains modified by etherification and a backbone containing (meth)acrylic acids (i.e. anionic units). Note that a wide variety of metals including aluminum treated with alkaline rinsing (column 14, line 65) and steel in which rust (oxidation) was induced (column 16 line 45-50) and it therefore reasonably appears that at least some of the metal substrates contained ionic groups.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Applicant's arguments filed 3-22-07 have been fully considered but they are not persuasive. Applicants argue that those of ordinary skill would understand that the side chains would not interact with charges surfaces "such as metal oxide surfaces". The instant specification however only refers to metal oxide surfaces with regard to the definition of "non interactive", and is unclear what is intended when applicants graft polymer is attached to other than metal surfaces. With re to applicants examples of graft side chains the claims are not limited to these.

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With re to the art rejections, claim 12 and those dependent thereon are drawn to a product not a process and process steps in the context of claim 12 have little meaning. All primary references relied upon recite the presence of at least two surfaces whether or not actual sliding takes place between the surfaces. Hubbell et al. disclose surfaces of medical devices such as catheters which need to be slid into a body cavity and as such sliding while contacting with tissue would be understood in this process. Also Hubbell discloses at paragraphs 1 and 57 application to a surface to prevent adhesion of tissue and as treated surface/tissue surface fail to adhere where they otherwise would the coefficient of friction is less than it would be in the absence of Hubbells surface treatment. The lubricating composition of Hubbell which is adhered to a device when in contact with tissue would be between the device on which it is present and the tissue. Li and Trextor are not relied upon to reject applicants process claims in that no process is disclosed by either reference in which a lubricating composition is administered between two sliding surfaces and no process is taught in which two surfaces engage in a process of sliding.

Any inquiry concerning this communication should be directed to Jeffrey C. Mullis, M-F, 9-5 pm at telephone number 571 272 1075.

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PRIMARY EXAMINER
GROUP 4200-1711

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